

CLAIMS

1. (Currently Amended) An image processing apparatus comprising:
an obtaining section for obtaining image data generated by converting an optical image passing through an optical system into digital data; and
a processing section for applying a degradation function based on a degradation characteristic of at least one optical element comprised in said optical system to said image data and restoring said image data by compensating for a degradation thereof;
a degradation function calculating section for calculating a degradation function on the basis of a focal length, an in-focus lens position and an aperture value of an optical system; and
a degradation-function storage unit for storing the degradation function calculated by the degradation function calculating section; wherein
degradation function stored in the degradation-function storage unit is applied to obtained image data.

2. (Original) The image processing apparatus according to claim 1, wherein said degradation function depends on a position of each pixel.

Claims 3 and 4. (Cancelled)

5. (Original) The image processing apparatus according to claim 1, wherein said degradation function corresponds to a plurality of pixels.

6. (Withdrawn) The image processing apparatus according to claim 1, wherein said processing section processes part of said image data, said part of said image data being determined on the basis of a difference between a pixel value of each pixel and pixel values of pixels adjacent to said each pixel.

7. (Withdrawn) The image processing apparatus according to claim 1, wherein said processing section processes part of said image data, said part of said image data being determined on the basis of said degradation function.

8. (Withdrawn) The image processing apparatus according to claim 1, wherein said processing section processes part of said image data, said part of said image data being determined on the basis of pixel values in said image data.

Claims 9 and 10. (Cancelled)

11. (Withdrawn) The image processing apparatus according to claim 10, wherein said one of said plurality of image data sets is restored without a sensor which detects a shake of an image capturing device.

12. (Withdrawn) The image processing apparatus according to claim 10, wherein said degradation function is generated as a two-dimensional filter on the basis of a track of a subject on images of said plurality of image data sets.

13. (Withdrawn) The image processing apparatus according to claim 10, wherein said degradation function is generated for each of representative positions on one of images of said plurality of image data sets.

14. (Withdrawn) The image processing apparatus according to claim 10, wherein any other image data set than said one of said plurality of image data sets is generated by a shorter-time image capture than said one of said plurality of image data sets.

15. (Withdrawn) The image processing apparatus according to claim 10, wherein any other image than an image of said one of said plurality of image data sets has less pixels than said image of said one of said plurality of image data sets.

16. (Withdrawn) The image processing apparatus according to claim 10, wherein any other image than an image of said one of said plurality of image data sets is a live view image.

17. (Withdrawn) An image pick-up apparatus comprising:
a generating section for generating a plurality of image data sets generated by two or more consecutive image pick-upping;
a calculating section for calculating a degradation function on the basis of a difference between said plurality of image data sets to restore one of said plurality of image data sets; and
an outputting section for outputting said one of said plurality of image data sets out of said apparatus together with said degradation function so as to restore said one of said plurality of image data sets with said degradation function.

18. (Withdrawn) The image pick-up apparatus according to claim 17, wherein said image pick-up apparatus is portable.

19. (Withdrawn) An image processing apparatus comprising:
a setting section for setting partial areas in a whole image, said partial areas being delimited according to contrast in said whole image; and
a modulating section for modulating images comprised in said partial areas on the basis of a degradation characteristic of said whole image to restore said whole image.

20. (Withdrawn) An image processing apparatus comprising:
a setting section for setting partial areas in a whole image on the basis of at least one degradation characteristic of said whole image; and
a modulating section for modulating images comprised in said partial areas on the basis of said at least one degradation characteristic to restore said whole image.

21. (Withdrawn) The image processing apparatus according to claim 20, wherein said at least one degradation characteristic is derived from a shake of an image capturing device, said whole image being captured by said image capturing device.

22. (Withdrawn) An image processing apparatus comprising:
a setting section for setting partial areas in a whole image on the basis of a distribution of pixel values in said whole image; and

a modulating section for modulating images comprised in said partial areas on the basis of a degradation characteristic of said whole image to restore said whole image.

23. (Withdrawn) The image processing apparatus according to claim 22, wherein said setting section sets said partial areas on the basis of a distribution of brightness in said whole image.

24. (Withdrawn) An image processing apparatus comprising:
a setting section for setting areas to be modulated in a whole image;
a restoring section for restoring said whole image by modulating images in said areas in accordance with a specified function; and
an altering section for altering sizes of said areas in accordance with a restored whole image, wherein
said restoring section again restores said whole image by modulating images in said areas whose sizes are altered by said altering section in accordance with said specified function.

25. (Withdrawn) The image processing apparatus according to claim 24, wherein said setting section sets said areas according to contrast in said whole image.

26. (Withdrawn) The image processing apparatus according to claim 24, wherein said setting section sets said areas on the basis of at least one degradation characteristic of said whole image.

27. (Withdrawn) The image processing apparatus according to claim 24, wherein said setting section sets said areas on the basis of a distribution of pixel values in said whole image.

28. (Withdrawn) The image processing apparatus according to claim 24, wherein said altering section alters said sizes of said areas in accordance with a distribution of pixel values around areas not to be modulated.